IN THE CLAIMS:

Please cancel all of the claims presently in the application and substitute the following new set of claims:

Sub B3

23. In a photovoltaic module of the type having an array of electrically interconnected photovoltaic cells encapsulated between a transparent front support sheet and a back sheet by a light-transmitting ionomer, said photovoltaic cells being interconnected by conductors that have been soldered in place using an acidic flux, the improvement wherein said light-transmitting ionomer is a zinc ionomer having the properties set forth in Tables I and II of the preceding specification.

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24. A photovoltaic module according to claim 23 wherein said zinc ionomer absorbs no more than about 0.3 wt % water.

25. A photovoltaic module according to claim 23 wherein said front support sheet is made of glass and said rear sheet is made of polyvinyl fluoride polymer.

26. A photovoltaic module according to claim 23 that exhibits no loss in electrical photovoltaic performance after 1000 hours of exposure to 85% RH/85°C damp heat and after 20 cycles of change of conditions between 85%RH/85°C and 0%RH/-40°C.

Sub B4

27. A photovoltaic module comprising a transparent front support sheet, a back sheet, an array of photovoltaic cells disposed between said front support sheet and said back sheet, a plurality of electrical conductors extending between said cells, said electrical conductors being physically and electrically coupled to said photovoltaic cells by solder connections, and an ionomer encapsulant extending between and bonded to said front support sheet and said back sheet and surrounding and bonded to said cells and said conductors, characterized in that

an acidic flux residue is present at one or more of said solder connections, and said ionomer is a zinc ionomer that is substantially inert with respect to reaction with said acid flux residue, and has a melt flow index of 5.5, a melting point of 95°C, a Vicat softening point of 65°C, a freeze point of 61°C, a density of 0.95, and an ultimate tensile strength of 5300 psi (MD) and 5100 psi (TD), with said values being determined according to the ASTM test methods listed in Tables I and II, and absorbs a maximum of 0.3 wt. % water.

28. A photovoltaic module according to claim 27 wherein said front support sheet is a CeO-free glass that is transparent to radiation with a wavelength in the range of about 400 to about 800 nM.

29. A photovoltaic module according to claim 27 wherein said photovoltaic cells are thin film photovoltaic cells that are coupled to one another by monolithic connections.

30. A photovoltaic module according to claim 27 characterized by cadmium telluride or CIGS photovoltaic cells.

31. A method of manufacturing a photovoltaic module comprising the steps of:

(a) providing one or more strings of electrically interconnected photovoltaic cells, each photovoltaic cell having a front light-receiving surface and a rear surface with first and second contacts attached to said front and rear surfaces respectively, and said photovoltaic cells being interconnected by conductors that have been soldered in place using an acidic flux;

(b) providing front and back support sheets with said front support sheet being stiff and transparent;

(c) placing at least one zinc ionomer sheet having a melt point of about 95°C (as determined by the ASTM method listed in Tables I and II) and a

maximum water absorption of 0.3 wt. % in overlying relation with one surface of said front support sheet;

(d) placing said one or more strings of photovoltaic cells in overlying relation with at least one sheet of zinc ionomer;

(e) placing a sheet of scrim in overlying relation with said one or more strings of photovoltaic cells;

(f) covering said sheet of scrim with one or more additional sheets of zinc ionomer having a melt point of about 95°C (as determined by the ASTM methods listed in Tables I and II) and a maximum water absorption of 0.3 wt. %;

(g) placing said second support sheet in overlying relation with said one or more additional sheets of zinc ionomer; and

A8 Contd

(h) heating the resulting assembly of said zinc ionomer sheets and one or more strings of photovoltaic cells to a temperature in the range of about 120°C to about 130°C and compressing said components together under a pressure in the range of about 390 to about 400 torr, so as to cause said zinc ionomer sheets to soften enough to encapsulate said photovoltaic cells and conductors; and

(i) cooling said assembly so as to cause said ionomer to form a solid bond to said photovoltaic cells, conductors, scrim and front and rear support sheets, whereby to produce a laminated module.

32. A method according to claim 31 wherein said zinc ionomer has the properties set forth in Tables I and II of the preceding specification.

33. A method according to claim 31 wherein said zinc ionomer absorbs no more than about 0.3 wt % water.

34. A method according to claim 31 wherein said front support sheet is a CeO-free glass that is transparent to radiation having a wave-length in the range of 400 to 800 nM.